IMPROVED OPTICAL SUBASSEMBLY
FOR OPTICAL COMMUNICATIONS

ABSTRACT OF THE DISCLOSURE

An optical signal transceiver subassembly is mounted on a lead frame for further attachment to an electronic printed circuit board. The optical subassembly is comprised of a solid-state laser, a pair of photo-detectors, an over-mold of transparent material having shapes forming the exposed surface thereof, the surface and a selective silvering of a portion thereof defining a beam-splitter mirror and an interior reflective focusing surface, preferably in the shape of a partial cylindrical surface. The beam-splitter mirror is lightly silvered and the cylindrical surface is silvered to enhance the reflection of the laser beam. The optical subassembly is further enclosed with a housing incorporating a pair of lenses and alignment pins. The lenses focus the data stream of optical light signals onto the end of the outgoing optical fiber and the data stream of optical light signals from the incoming optical fiber onto and through the beam-splitter and onto a first photo-detector. The beam-splitter and the partial cylindrical surface reflect the laser beam portion deflected from the primary laser beam path onto a second photo-detector to provide a data stream from which the operation of the laser may be monitored, thereby insuring the proper transmission of the data signals provided to the laser through the lead frame and its associated electronic connections.